

We claim:

1. A method of controlling cathodic protection being applied to a metal structure having a surface disposed in an electrolytic environment comprising:
 - electrically connecting a metal coupon to the surface of the metal structure;
 - positioning the metal coupon at a predetermined position relative to the surface of the metal structure and within the electrolytic environment;
 - applying a cathodic protection agent to the surface of the metal structure to effect cathodic protection of the surface of the metal structure;
 - measuring a cathodic protection indication proximate to the metal coupon;
 - comparing the cathodic protection indication with a predetermined value; and
 - adjusting the cathodic protection agent being applied to the surface of the metal structure in response to the comparison.
2. The method as claimed in claim 1, wherein the cathodic protection agent is an electric current.
3. The method as claimed in claim 1, wherein the cathodic protection agent is a chemical composition.
4. The method as claimed in claim 3, wherein the chemical composition has a tendency to effect alkaline conditions at the surface of the metal structure.
5. The method as claimed in claim 1, wherein the predetermined position is in close proximity to the metal structure.
6. The method as claimed in claim 1, wherein the electrolytic environment is selected from the group consisting of: a subsurface soil environment and an aqueous solution.

7. A system for controlling the efficacy of cathodic protection being applied to a metal structure disposed in an electrolytic environment comprising:

means for applying an electrical current to the metal structure to effect cathodic protection of the metal structure;

means for measuring the efficacy of the cathodic protection, said means for measuring being electrically connected to the metal structure; and

a passage for receiving movement of the means for measuring to effect positioning of the means for measuring at a predetermined position relative to the metal structure.
8. The system as claimed in claim 7, wherein the means for measuring the efficacy of the cathodic protection includes a means for simulating the cathodic protection of a crevice of the metal structure.
9. The system as claimed in claim 8, wherein the means for measuring the efficacy of the cathodic protection further includes a means for sensing a cathodic protection indication of the means for simulating.
10. The system as claimed in claim 9, wherein the means for simulating comprises a metal coupon.
11. The system as claimed in claim 10, wherein the metal coupon defines a simulated crevice.
12. The system as claimed in claim 11, wherein the metal coupon includes first and second opposing flanges joined by a web, such that the simulated crevice is defined by the space between the first and second flanges.
13. The system as claimed in claim 12, wherein the coupon is electrically coupled to the metal structure.

14. The system as claimed in claim 13, wherein the means for sensing senses the cathodic protection indication in the crevice.
15. A system for effecting non-destructive testing of a characteristic of a target disposed in an electrolytic environment comprising:
 - means for effecting the non-destructive testing including a radiation transmitter for irradiating the target, and a receiver for receiving a response from the target to the radiation; and
 - a passage for receiving movement of the receiver to effect positioning of the receiver at a predetermined location relative to the target.
16. The system as claimed in claim 15, wherein the target is a metal structure.
17. The system as claimed in claim 16, wherein the target is a metal structure having a surface disposed in an environment which is not conveniently accessible.
18. The system as claimed in claim 16, wherein the target is a metal structure having a surface submerged in an aqueous electrolytic environment.
19. The system as claimed in claim 18, wherein the target is a metal structure having a surface submerged in an electrolytic soil environment.
20. The system as claimed in claim 18, wherein the target is a metal structure having a surface submerged in an aqueous solution.
21. A system for measuring a characteristic of a metallic structure disposed in an electrolytic environment comprising:
 - means for sensing the characteristic of the metal structure; and
 - a passage for receiving movement of the means for sensing to effect positioning of the means for sensing at a predetermined position relative to the metal structure.

22. The system as claimed in claim 21, wherein the means for sensing senses an electrical potential of the metal structure.
23. A system for mitigating stray current discharging to or being discharged from a metal structure disposed in an electrolytic environment comprising:
- a means for predetermining a location of stray current discharge;
 - a means for mitigating stray current discharge; and
 - a passage for receiving movement of the means for mitigating to effect positioning of the means for mitigating at the predetermined location.

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